Experimental differentiation of meaning change and averaging explanations for context effects

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The effects of contexts on correlations between evaluations of traits were examined to provide a differentiation of meaning change and averaging explanations for context effects in evaluative impression formation. Two different types of traits (ambiguous and nonambiguous) were evaluated under two different instructional conditions (P, or person description, and W, or random words). Both types of traits manifested shifts in mean levels of evaluation in Condition P, but not in W, with little evidence for differential effects across types of traits. Correlational analyses revealed differences between ambiguous and nonambiguous traits. Ambiguous traits manifested large shifts in the magnitude of intratrait correlations across contexts in Condition P, indicating that meaning change had occurred. There was little evidence for such effects among nonambiguous traits. It was concluded that meaning change is a highly restricted effect and does not represent a serious challenge to averaging explanations for context effects on component ratings in impression formation.

The present study examines the conflict between the meaning change and averaging (or halo effect) explanations for context effects in impression formation (e.g., Anderson, 1971; Hamilton & Zanna, 1974; Kaplan, 1974; Wyer, 1974). Although context effects are present in a variety of impression formation paradigms (e.g., serial presentation tasks), the present report focuses on the evaluation of these effects in the components rating task (e.g., Anderson & Lampel, 1965; Asch, 1946), for this task provides the clearest distinction between the two explanations.

In the components rating task, subjects are presented with a set of adjectives and asked to respond to one or more components (or test traits) in this set. When the adjective set is presented as a person description, two distinct effects may be noted: (a) evaluative ratings of test traits are displaced toward the evaluative level of the context (Anderson, 1966, 1974; Anderson & Lampel, 1965; Wyer & Dermer, 1968; Wyer & Watson, 1969), and (b) attributions from the test trait to other traits or to semantically defined rating scales change across contexts (e.g., Asch, 1946; Hamilton & Zanna, 1974; Wyer, 1974).

The meaning change explanation proposes that trait meanings are determined, in part, by the contexts in which they appear. According to this interpretation, the observed changes in level of evaluation reflect these underlying changes in meaning (e.g., Wyer, 1974; Ostrom, Note 2). This

explanation directly contradicts the stimulus independence assumption, which is basic to the use of functional measurement techniques in the analysis of impression formation processes: If trait meanings do change across contexts, the independence assumption is obviously invalid, for a given trait term could not be considered as the same stimulus across different contexts.

The averaging explanation, in contrast, retains the independence assumption by distinguishing between the evaluative rating of a trait in a particular context and the evaluative scale value of a trait. A conceptual model of context-related shifts in evaluative ratings (Anderson, 1966) proposes that the evaluative rating of a trait in a particular context (s') is an integration (i.e., weighted average) of the evaluative scale value of the trait (s) and the overall evaluative impression (i), i.e.,

$$s' = ws + (1 - w)I, \quad (1)$$

where w is a weighting factor.

Following this interpretation, context-related shifts in trait inferences are assumed to represent a process of inferring attributes which are evaluatively similar to the in-context evaluation or to the overall impression, rather than a process of meaning change (e.g., Anderson, 1971; Kaplan, 1974, 1975).

Empirical tests of the averaging explanation have employed a somewhat different definition of averaging, interpreting support for an additive model in the analysis of variance as evidence for averaging. According to this definition of averaging effects, the in-context evaluation (Y_{ij}) of a trait is presumed to be described by a model of the form

$$Y_{ij} = C + A_i + B_j + e_{ij}, \quad (2)$$

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where A_i is considered to represent the evaluative scale value of trait i , B_j is the effect attributable to context j , C is a constant within the analysis, and e_{ij} is an error term associated with the response (cf. Anderson, 1966). Goodness of fit of this model is evaluated by testing the Traits by Contexts interaction term.

It is important to note, however, that this is not a sufficient test of the meaning change explanation. It can only support or inform averaging. Arguments that the absence of interactions is inconsistent with the meaning change explanation (e.g., Anderson, 1971; Kaplan, 1971, 1974), or that their presence is evidence for meaning change (Wyer, 1974; Ostrom, Note 2), depend upon the assumption that change in mean evaluations is an appropriate and sufficient measure of change in meaning. This assumption is erroneous, for trait meanings and their mean evaluations are not equivalent constructs. Meaning is a complex property, requiring multidimensional representation, while evaluative scale values of traits may be represented by appropriately oriented unidimensional vectors within such a multidimensional semantic space (e.g., Bryson, 1974a; Cliff & Young, 1968; Hanno & Jones, 1973; Rosenberg, Nelson, & Vivekananthan, 1968). A consequence of this difference in dimensionality is that there is no simple or direct relationship between change in meaning and change in mean evaluation (cf. Cliff, 1969).

Differentiation of Meaning Change and Averaging Effects

In order to differentiate the meaning change and averaging explanations, it is necessary to define a response characteristic for which they predict opposed effects of contexts. The present study proposes and evaluates such a differentiation, defined in terms of the effects of contexts on correlations (across subjects) with the separate in-context evaluations of a trait. The purpose of this section is to demonstrate that tests of the averaging explanation depend upon the assumption, and thus may be considered to predict, that such intercorrelations are constant across contexts, while the meaning change explanation predicts specific changes in these correlations.

The use of analysis of variance techniques to define and test the averaging effect carries with it certain assumptions and prerequisites which are not often considered in these applications. Specifically, when the same set of subjects responds to a given trait in different contexts (a necessary condition for the measurement of change in response), the definition of traits and contexts as fixed effects and the assumption of homogeneity of covariance require that correlations between those separate responses be constant. The difference between the evaluations of a trait in two

contexts, j and j' , may be defined, according to Equation 2, as

$$Y_{ij} - Y_{ij'} = (B_j - B_{j'}) + (e_{ij} - e_{ij'}). \quad (3)$$

That is, the difference between any two ratings of the same trait should be a constant, the difference between the constant (fixed) effects defined for those contexts, within the limits of error variance. One prediction that may be derived from this assumption is that correlations between separate in-context evaluations of a trait should be unaffected by differences in mean levels of evaluation, for correlations are not affected by constant differences between variables. This is, of course, implicit in the assumption of homogeneity of covariance required in repeated measures of variance designs. All such intercorrelations for a given trait should be approximately equal in value.

Another view of the "equality of intercorrelations" prediction may be provided by considering that the averaging explanation is based on the assumption that evaluative scale values of traits are invariant across contexts. Prior research has focused on predictions concerning context independence of mean evaluative ratings; the present prediction simply expands this to require that invariance of evaluative scale values should hold for all subjects. Viewed in this manner, intercorrelations between separate ratings of the same trait may be considered equivalent to reliability coefficients, i.e., they should be less than unity to the extent that individual differences in evaluative ratings are not maintained across contexts.

The perspective offered by the meaning change explanation, in contrast, suggests a rather different interpretation of intratrait correlations. If trait stimuli are predicted to change in meaning across contexts, then correlations between separate evaluations of those stimuli may be considered as validity coefficients, i.e., as a measure of the extent to which any two sets of evaluative judgments are responses to the same underlying construct, or mean the same thing.

Bryson (1974a) has demonstrated that correlations between evaluative ratings of separate traits are determined by their semantic similarities, because of individual differences in the relative valuation of trait terms describing different dimensions of meaning: ratings of synonyms were positively correlated, antonyms were negatively correlated, and unrelated words were relatively uncorrelated with each other. In the present case, the interpretation of evaluative intercorrelations is even more direct, for we are concerned with separate evaluative responses to the same trait, varying only the context in which it is presented. High correlations would then suggest that

the trait had not changed meaning across contexts. However, reduced correlations would not, by themselves, constitute sufficient evidence to confirm the presence of meaning change, for such effects may be attributed to error in evaluative responses rather than to any systematic change in the meaning of a trait. For this reason, an additional requirement may be imposed upon the definition of meaning change effects: reductions in correlations between evaluations of a trait in different contexts must be accompanied by increases in correlations with independently obtained evaluations of the traits which define those contexts. That is, meaning change must be in the direction of the context.

Methodological Considerations

A test of this proposed differentiation of meaning change and averaging effects requires two conditions: (a) the definition of a set of trait stimuli for which meaning change effects are expected as well as a set for which they are debated, and (b) the definition of an experimental condition in which context effects, whatever their source, do not occur as well as a condition in which they do occur.

The former condition is necessary in order to evaluate the sensitivity of the correlational measure of meaning change, i.e., to demonstrate that correlations between separate evaluations of a trait do change when they are expected to. This requirement was met in the present study by employing a set of ambiguous, or polysemous, adjectives, i.e., adjectives which have more than one distinct meaning (e.g., sensitive, discriminating, etc.). Such adjectives are considered to represent a special case: they are, in fact, two distinct stimuli which happen to have the same external form. Such stimuli have been noted and specifically excluded from tests of the averaging explanation (cf. Anderson, 1971). However, evidence for meaning change effects among these adjectives would serve to validate the method and provide a basis for evaluating correlations among in-context evaluations of relatively nonambiguous traits.

The latter condition is necessary to demonstrate that correlations between separate in-context evaluations of traits do not change when they are not supposed to. This requirement was met by employing two different experimental conditions, one in which trait sets were presented as a person description, and another in which trait sets were presented as random collections of words. These conditions are essentially equivalent to the P and W conditions, respectively, employed by Anderson and Lampel (1965) and Wyer and Watson (1969). There should be no evidence of context effects, in terms of either mean evaluations or intercorrelations, in Condition W. Therefore, this condition should provide an estimate of the reliability of trait ratings against which equivalent correlations in Condition P may be evaluated.

Table 1
Nonambiguous Traits and Contexts

Test Trait	Context Traits
Reliable	Responsible Dependable
Confident	Self-assured Certain
Obstinate	Stubborn Hard-headed
Dull	Boring Monotonous

Table 2
Ambiguous Traits and Contexts

Test Trait	Context 1	Context 2
Conservative	Right-Wing Dogmatic	Cautious Prudent
Critical	Insulting Quarrelsome	Painstaking Perfectionistic
Curious	Inquisitive Scientific	Nosy Meddling
Discriminating	Knowledgeable Refined	Prejudiced Bigoted
Funny	Humorous Joking	Strange Weird
Sensitive	Artistic Perceptive	Touchy Edgy
Serious	Quiet Studious	Cold Grim
Thoughtful	Intelligent Reflective	Considerate Kind

METHOD

Subjects

The subjects were 84 introductory psychology students, fulfilling an experimental participation course option. They were tested in two groups of 42 each, corresponding to the instructional conditions manipulation.

Preparation of Stimulus Materials

Nonambiguous adjectives. Four traits, corresponding to four evaluative levels (H, M+, M-, L), and assumed to have only one apparent meaning each, were selected as test traits. Two synonyms for each trait were also selected to form a context set matched in meaning and evaluative level. These test traits and their matched contexts are presented in Table 1. Each test trait was combined with each context in a 4 by 4 design, resulting in the generation of 16 three-adjective (test trait plus context) sets. Ordinal position of the test trait in these sets was systematically varied across sets.

Ambiguous adjectives. As the purpose of the present study was to provide an exhaustive test of the proposed correlational measure of meaning change, a decision was made to examine context effects for as many ambiguous traits as possible. Consequently, eight different adjectives, each assumed to have more than one distinctive meaning, were selected from discussions in the literature or were generated by the authors. For each such adjective, two two-adjective contexts, each defining one possible meaning of that trait, were also generated. These traits and their contexts are presented in Table 2. A given ambiguous adjective was randomly placed within each of its two defining contexts, resulting in the generation of 16 three-adjective sets.

Figure 1. Evaluations of nonambiguous traits across contexts and conditions.

Two copies of each of these 32 adjective sets were made on 2 x 2 slides. In one (introductory set), the three traits were presented, listed in a column. In the second (test set), the test trait in that set was underlined. Ambiguous and nonambiguous trait sets were alternated, with appearance of the same test trait or context set maximally separated in the total series. Two additional filler sets were added at the beginning of the series to accustom subjects to the rating task.

Procedures and Judgment Conditions

The subjects were first presented with a listing of the 52 separate traits employed in this study, listed in alphabetical order. They were asked to indicate how much they would like or dislike a person described by each individual trait in turn, using a 10-point (0 = most negative, 9 = most positive) rating scale. When all subjects had completed this task, they were told that they would now be presented with a number of slides, each of which contained three adjectives, and would make some more judgments using the same rating scale as before. The remaining instructions constituted the instructional conditions manipulation.

In Condition P, subjects were told that each of these sets of three adjectives described a person. An initial slide listing all three traits would be presented first, to allow subjects to make an implicit overall evaluation of the person. Then the same set would be presented a second time, but with one of the traits underlined. Subjects were then to indicate how much they liked that particular aspect of the person, using the 10-point evaluative rating scale.

In Condition W, instructions on the sequence of slides were essentially similar, but subjects were told that the three traits on any slide were merely randomly combined words. They did not describe any one person; in fact, it would be very difficult in some cases for all traits to describe a single individual. When the second set in a pair appeared, subjects were to indicate how much they liked persons described by the underlined trait, using the 10-point evaluative scale.

RESULTS AND DISCUSSION

Results and discussion of the several analyses necessary for this study are subdivided for convenience into more traditional comparisons of mean evaluative ratings by analysis of variance techniques, followed by the correlational analyses for both types of traits.

Analysis of Variance: Nonambiguous Traits

The 2 (conditions) by 4 (traits) by 4 (contexts) repeated measures analysis of variance for nonambiguous traits was a relatively straightforward replication of earlier studies. Means for the in-context evaluations of the traits under the two instructional conditions are graphically displayed in Figure 1. As predicted, mean evaluations were systematically displaced toward contexts in Condition P, but not in Condition W. This visual examination was supported by the analysis of variance, which revealed large main effects due to traits [$F(3,246) = 361.73$, $MSe = 5.32$, $p < .001$] and contexts [$F(3,246) = 30.83$, $MSe = 59.65$, $p < .001$]. The main effect for conditions [$F(1,82) = 6.10$, $MSe = 9.50$, $p < .05$] and the interaction of conditions with both traits [$F(3,246) = 6.79$, $p < .001$] and contexts [$F(3,246) = 23.69$, $p < .001$] also were consistent with the averaging model; judgments in Condition P were less polarized, overall, because of the positive context effects. The Traits by Contexts interaction was also significant [$F(9,738) = 2.14$, $MSe = 1.01$, $p < .05$], as was the triple interaction [$F(9,738) = 2.13$, $p < .05$], both of which are inconsistent with the averaging model. However, a reanalysis of data within Condition P revealed that this interaction was attributable to the differential weighting of positive and negative stimuli in Condition P, with negative traits and contexts receiving greater weight than positive (cf. Hamilton & Zanna, 1972; Hodges, 1974).

Analysis of Variance: Ambiguous Traits

As specific context sets were developed for each ambiguous trait, eight separate 2 (conditions) by 2 (contexts) analyses of variance were performed. The means and standard deviations for these ratings, and their associated F ratios, are presented in Table 3. Context-free (CF) means and standard deviations, although not relevant to this analysis, are also presented for later discussion.

As may be seen, contexts had significant effects on judgments for all traits except conservative and thoughtful. The absence of effects in these two cases is not surprising, however, for the mean evaluations of their separate contexts were not significantly different, thus significant effects would not be predicted. The interaction term achieved conventional ($p < .05$) significance levels for three traits (curious,

Table 3
Evaluative Ratings and Associated F-Ratios for Ambiguous Traits

		CF		Context 1		Context 2		Conditions	F Ratios	
		M	s	M	s	M	s		Contexts	Interaction
Conservative	P	4.71	1.38	4.00	1.87	4.10	1.53	3.89	.11	.11
	W	4.93	1.70	4.64	1.38	4.64	1.30			
Critical	P	3.40	1.71	2.81	1.85	3.40	1.56	3.49	3.98*	1.17
	W	3.52	1.86	3.71	2.00	3.83	1.87			
Curious	P	6.00	2.00	5.86	1.63	4.19	1.86	4.28*	14.29**	13.50**
	W	5.78	1.88	5.67	1.75	5.64	1.69			
Discriminating	P	3.45	1.90	4.05	1.87	2.21	1.89	.45	20.07**	5.53*
	W	3.40	2.64	3.67	2.41	3.10	2.20			
Funny	P	7.54	.97	6.71	1.55	5.69	1.94	6.14*	7.62**	3.59
	W	7.38	1.43	6.95	1.21	6.76	1.51			
Sensitive	P	6.71	1.69	6.88	1.86	3.95	1.97	8.80**	50.28**	8.61**
	W	7.33	1.54	6.98	1.84	5.76	2.25			
Serious	P	5.36	1.69	5.24	1.48	3.60	2.13	9.00**	33.40**	3.86
	W	6.05	2.01	5.74	1.43	4.93	1.69			
Thoughtful	P	8.02	1.47	8.10	1.10	7.98	1.75	.66	.44	2.21
	W	8.33	.75	8.07	1.09	8.38	.96			

Note—All F ratios have $df = 1/82$

* $p < .05$

** $p < .01$

discriminating, sensitive), marginal ($p < .10$) significance for two others (funny, serious), and were not significant for the remaining three traits (critical, conservative, thoughtful). The absence of a significant interaction for the latter two traits is related to the lack of a significant main effect for contexts, while the nonsignificant interaction of the former trait is due to a small, nonsignificant shift in mean evaluations in Condition W.

In general, then, these results, like those for the nonambiguous traits, demonstrate the expected shifts in mean evaluation in Condition P, with little evidence for such shifts in Condition W. Overall, there are no noticeable differences between these two classes of traits in terms of the nature of the effects of contexts and conditions on mean evaluative judgments of traits.

Correlational Analyses: Ambiguous Traits

Each of the ambiguous traits was evaluated three times, once in the context-free (CF) condition, and once in each context. The correlations among these three ratings for each trait are presented in Table 4. As may be seen, there was no evidence of any shifts in correlation values in Condition W. All correlations were significant, with an average (z transform for averaging) correlation of .58 across all intrait correlations. In Condition P, however, there were marked decreases in correlations between evaluations ($\bar{r} = .30$), as predicted. Overall, 23 of the 24 equivalent correlations were lower in Condition P than in Condition W (correcting for ties at the third decimal place), a highly unlikely outcome if both sets of correlations are considered to represent independent estimates of the same population

correlation values ($\chi^2 = 40.32$, $p < .001$). The decrease in correlation values in Condition P cannot be explained by restriction in variance of in-context evaluations. As may be seen by reference to Table 3, there is no simple relationship between correlation magnitude and relative sizes of standard deviations. In most cases, variances of in-context evaluations are greater than variances of CF evaluations.

The manner in which these correlations have changed is also of some interest. In five cases (curious, discriminating, funny, sensitive, serious), the shifts were especially noticeable. In each of these cases, the correlation between the CF evaluation and the evaluation in Context 1 (C1, from Table 2) was both significantly greater than zero and not significantly less than the equivalent correlation in Condition W. However, the evaluation in Context 2 (C2) was not significantly related to either the CF or the C1

Table 4
Interrelations of Evaluative Ratings Across Contexts: Ambiguous Traits

Test Trait	Comparison and Condition					
	CF-C1		CF-C2		C1-C2	
	P	W	P	W	P	W
Conservative	.45	.69	.42	.69	.54	.72
Critical	.48	.59	.27	.49	.45	.74
Curious	.43	.62	.20	.55	.03	.62*
Discriminating	.66	.67	.12	.53*	-.03	.54*
Funny	.34	.48	.21	.60*	.01	.50*
Sensitive	.70	.70	.02	.40*	-.24	.41*
Serious	.47	.47	.01	.44*	.14	.64*
Thoughtful	.33	.59	.24	.46	.41	.62

Note—Italicized correlation values are not significant ($p > .05$).

*Pairs of correlations which are significantly different across conditions ($p < .05$).

Table 5
Intercorrelations of Evaluative Ratings Across
Contexts: Nonambiguous Traits

Contexts Corre- lated	Reliable		Confident		Obstinate		Dull	
	P	W	P	W	P	W	P	W
CF-H	56	58	40	<i>06</i>	61	39	48	37
CF-M+	54	54	36	34	73	38	26	54
CF-M-	37	58	<i>04</i>	32	57	34	24	53
CF-L	50	46	<i>04</i>	<i>03</i>	52	51	37	47
H-M+	72	47	67	47	71	57	37	42
H-M-	51	51	18	30	44	52	31	43
H-L	32	33	<i>14</i>	48	28	63	<i>13</i>	43
M+-M-	51	81	35	22	73	34	48	70
M+-L	38	66	38	50	50	53	62	71
M--L	48	57	77	36	61	30	74	86
$\bar{r}$	48	57	36	32	58	44	42	57

Note—Decimals omitted. *Italicized correlation values are not significant.*

evaluation, and these latter two correlation values for each trait were significantly less than their Condition W counterparts. This pattern of results suggests that one meaning of each trait is primary, inferred when the trait is rated independently as well as when elicited by the appropriate context, while the alternative (C2) meaning is secondary and is elicited only when adjectives which define or require that interpretation form the context for the impression. A subsequent experimental check supported these assertions: a group of subjects ($N = 30$) were asked to indicate which of the two meanings for each trait they had employed when they made independent evaluations of those traits; in all cases, the C1 definition was significantly more likely to be reported as the meaning employed in making these judgments.

For the remaining three traits, evidence for meaning change is less pronounced, but consistent with the predictions. For conservative, the difference between the CF-C2 correlations across conditions is significant in a directional test ($p < .05$), and the remaining two correlations in Condition P are consistently, although not significantly, lower than their Condition W equivalents. For critical and thoughtful, the CF-C2 correlations are not significant, and correlations involving the C2 evaluation are (nonsignificantly) lower than their Condition W counterparts. It may be noted that the correlations between the two in-context evaluations for these three traits were considerably larger than those for the other traits, suggesting that the separate contexts were not sufficient to cause a strong change in meaning.

While there are problems associated with the comparison of correlation magnitudes across different samples, the consistency of the present results suggests that meaning change is an appropriate concept to explain these results. This assertion is further supported by examination of the correlations between in-context evaluations of ambiguous traits

and prior independent evaluations of the traits which defined those contexts. As noted earlier, support for the meaning change explanation requires that the evaluation of a trait in a context would correlate more highly with evaluations of the traits defining that context than with traits defining other contexts. This requirement was supported in Condition P (15 of 16 comparisons in the predicted direction, $\chi^2 = 24.50$, $p < .001$). In contrast, in Condition W, only 9 of 16 correlations shifted in this direction. Meaning change, for these traits, is in the direction defined by the context.

Correlation Analyses: Nonambiguous Traits

Given this evidence in support of the correlational method for analyzing meaning change effects, it is possible to test the meaning change hypothesis for a set of traits which do not have apparent separate meanings. Data relevant to this analysis are presented in Table 5. Each of the nonambiguous traits was evaluated five separate times, once in the context-free (CF) condition and once in each of the four contexts (H, M+, M-, and L). The 10 possible zero-order correlations among these ratings are displayed in columns for each trait and condition.

One may compare these correlations across conditions in several ways. First, it may be noted that the average correlations (z transform for averaging) for each trait, listed at the bottom of each column, do not differ across conditions, nor does the overall average correlation ($\bar{r} = .47$ and $.48$ in Conditions P and W, respectively), suggesting that instructional conditions had no general effect on intercorrelations of trait evaluations. This may also be noted by comparing equivalent correlations across conditions to see if there is any tendency for Condition W correlations to be higher than their Condition P equivalents, as the meaning change hypothesis would predict. Although there was considerable variability in these separate correlation values, most notably for confident and dull, there was no overall evidence that correlations in W were greater than those in P (24 of 40 comparisons were in the predicted direction, $\chi^2 = 3.2$, nonsignificant). The correlation values in the separate conditions may be considered as estimates of the same population correlation values.

CONCLUSIONS

The primary purpose of the present research was to evaluate a method for differentiating between meaning change and averaging effects. Strong support was given to predictions concerning the effects of contexts on correlations between evaluations, across two types of stimuli and two different experimental conditions. In Condition W, there were no effects of contexts on either mean evaluative ratings or correlations between ratings,

regardless of trait type. However, in Condition P, where there were large context-related shifts in evaluation for both types of traits, correlations between separate evaluations were consistently reduced, relative to the Condition W values, only for the ambiguous traits.

Two possible arguments against the present method for defining meaning change effects may be noted. First, it may be argued that this method would fail to detect situations in which the effects of meaning change on evaluative ratings are equivalent across subjects, i.e., a situation in which meaning change is claimed, but the correlation coefficient is not affected. The point of the present differentiation is that such an effect is precisely identical to that predicted by averaging, and there is no reason to postulate a psychologically more complicated process to account for it. An extension of this argument, that the effect defined by Anderson (1966) as averaging is actually meaning change, is beyond the purview of this study.

A second argument is that meaning change occurs at the individual level, but correlations express relationships which exist across individuals. There are several responses to this argument. First, the correlational measure of meaning employed in this study depends critically upon the stability of individual differences in response patterns; thus, even though it does not provide a measure of idiosyncratic meaning appropriate to any particular individual, it does provide a measure that is appropriate to the aggregate. Furthermore, Bryson (1974b, Note 1) has demonstrated that such correlational measures of meaning similarity are an efficient predictor of individual reports of "change" in evaluative impressions caused by the combination of descriptors. Thus the present measure is at least correlated with individual measures of meaning. Third, and most importantly, the present method emphasizes that the need to understand context effects occurs at the level of the stimulus rather than the subject; the present method provides an appropriate test of the assumption that trait evaluations are invariant, up to the addition of a constant, across contexts.

Alternatively, it may be argued that the averaging explanation is able to account for the observed reductions in correlations for ambiguous traits by assuming that they reflect individual differences in changes in the weights parameter (see Equation 1). This, too, may be discounted for several reasons. First, assumptions concerning the weights parameter are not provided for in empirical tests of the averaging model, which actually employ the definition presented in Equation 2. Second, such attempts to account for these reductions in intratrait correlations may be achieved only at the expense of the appropriateness of the analytic model employed to test averaging, i.e., changes in weights at the individual level would

violate the assumption of homogeneity of covariance which is prerequisite to tests of the additive model. Finally, the averaging explanation has no method for predicting that correlations between evaluative ratings of test traits and evaluations of their contexts will increase when presented in those contexts. The averaging explanation may be sufficiently flexible to account for a significant Traits by Contexts interaction, but it cannot discard the notion of stimulus invariance as defined by the correlations between separate evaluations of the same trait in different contexts.

The present experiment does not provide a true critical comparison of the meaning change and averaging explanations, as different contexts were employed for the different trait types. However, the obtained results do suggest that meaning change does not represent a serious challenge to the averaging explanation. Meaning change effects were found, but only for stimuli where such effects were expected. In fact, if one considers that at least one of the nonambiguous traits employed in the present study was in fact polysemous (i.e., dull = boring and dull = stupid), the present results restrict the meaning change explanation even more, to contexts in which the separate meanings are defined. While further research is necessary in order to define the limiting conditions for such changes in meaning to occur, it seems apparent that they may be experimentally controlled, if desired, by careful selection of stimuli.

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